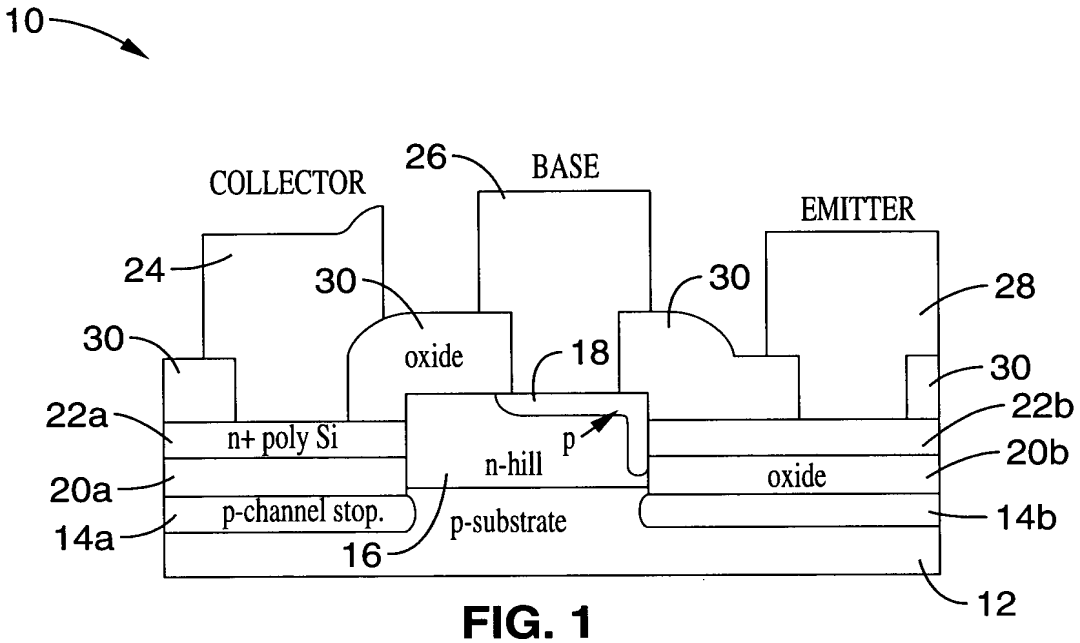
10
COLLECTOR
26
BASE
EMITTER
24
30
30
28
30
oxide
18
30
22a
n+ poly Si
p
22b
n-hill
20b
20a
oxide
p-channel stop.
p-substrate
14b
14a
16
12

FIG. 1

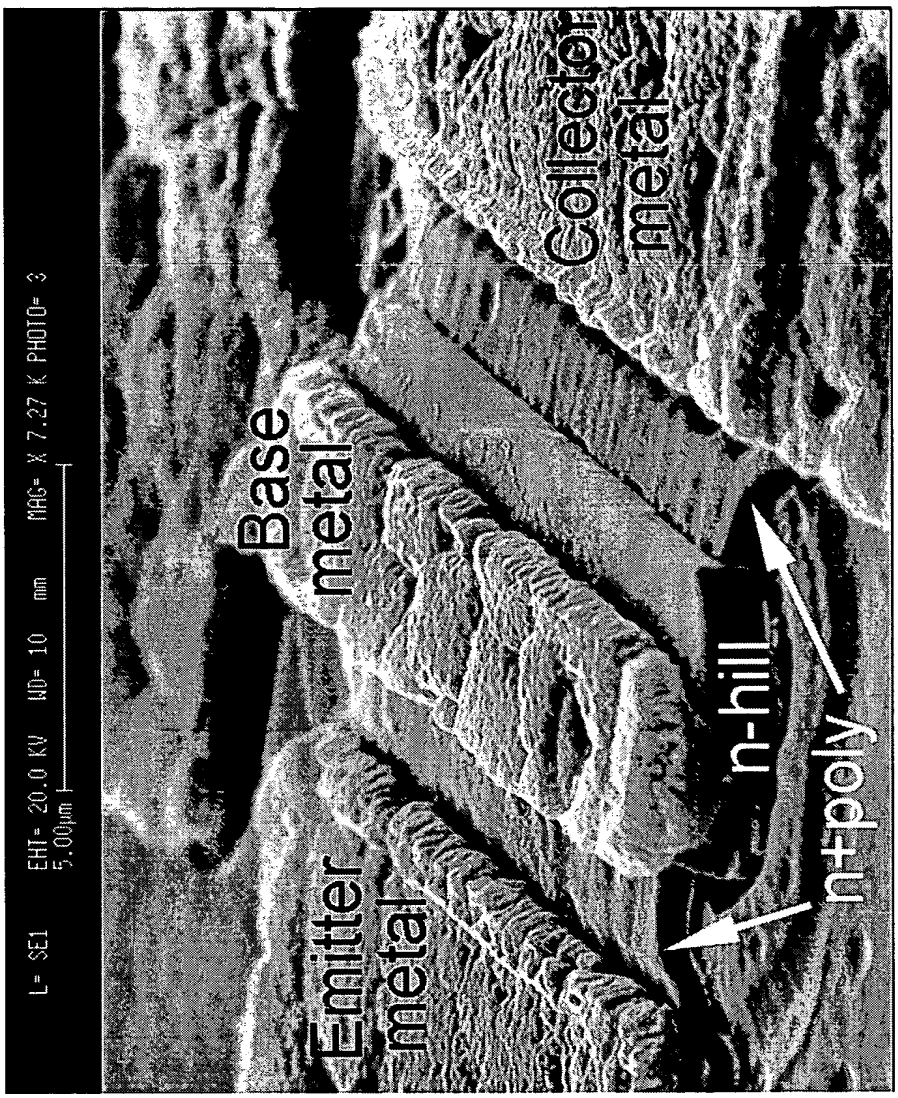
Base
metal
Emitter
metal
Collector
metal
n-hill
n+poly
L= SE1
EHT= 20.0 KV
WD= 10 mm
MAG= X 7.27 K PHOTO= 3
5.00µm

FIG. 2

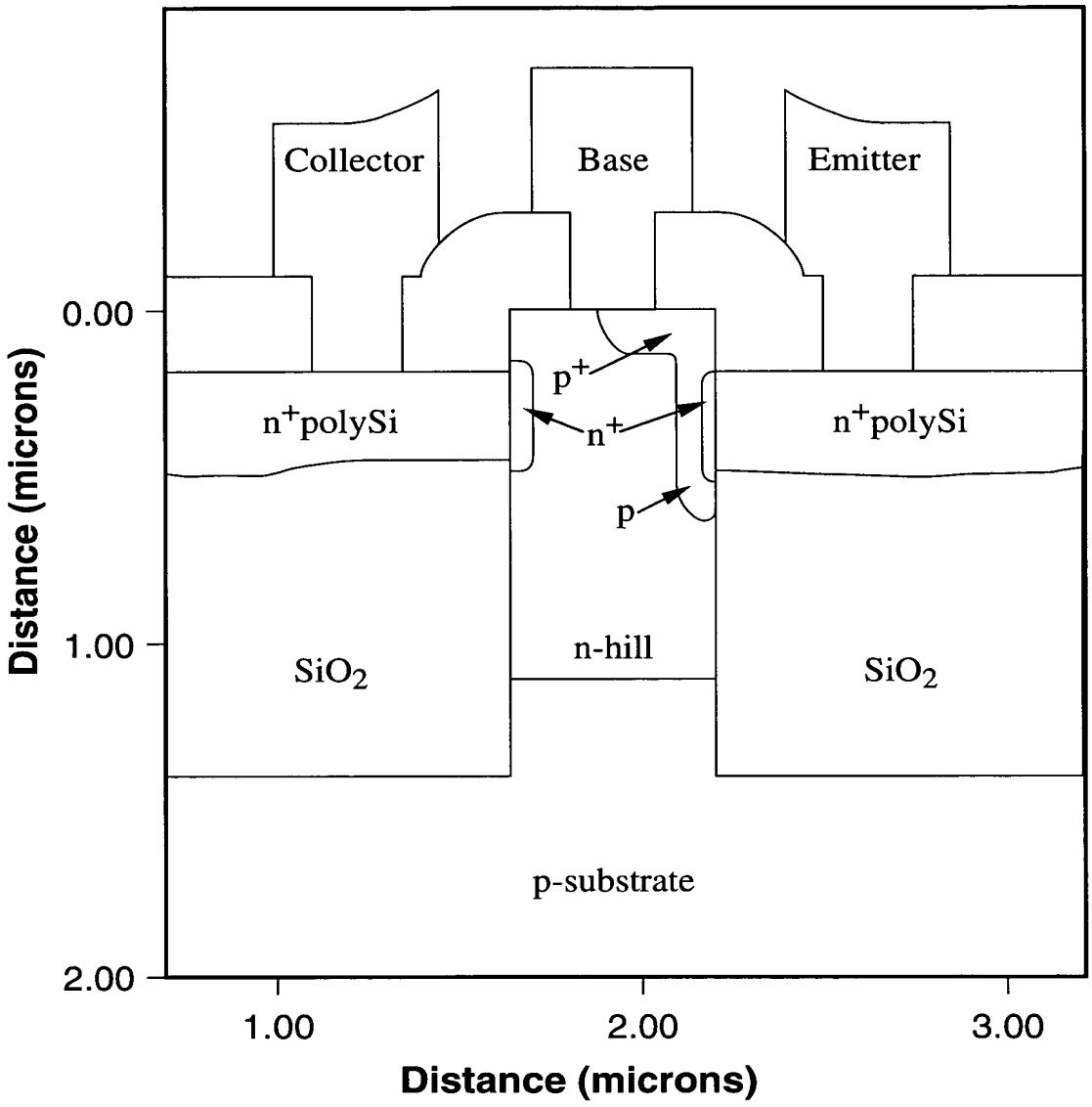
Collector
Base
Emitter
0.00
1.00
2.00
Distance (microns)
p+
n+
p
n+polySi
n+polySi
SiO2
n-hill
SiO2
p-substrate
1.00
2.00
3.00
Distance (microns)

FIG. 3

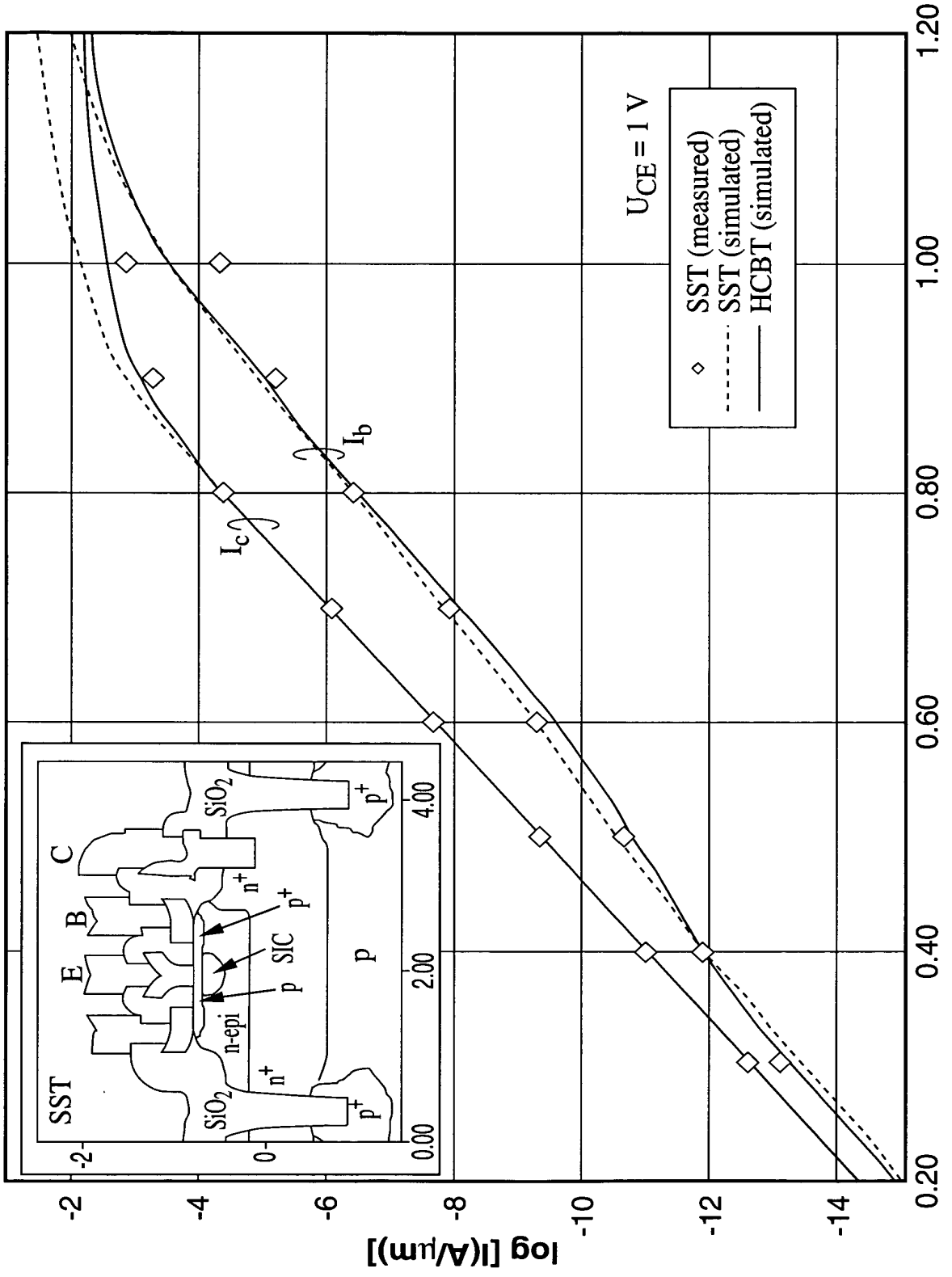
log [I(A/μm)]
Base-Emitter Voltage (Volts)
U_{CE} = 1 V
SST (measured)
SST (simulated)
HCBT (simulated)
I_b
I_c
SST
C
B
E
SiO_2
n^+
p^+
p
SIC
n-epi

FIG. 4

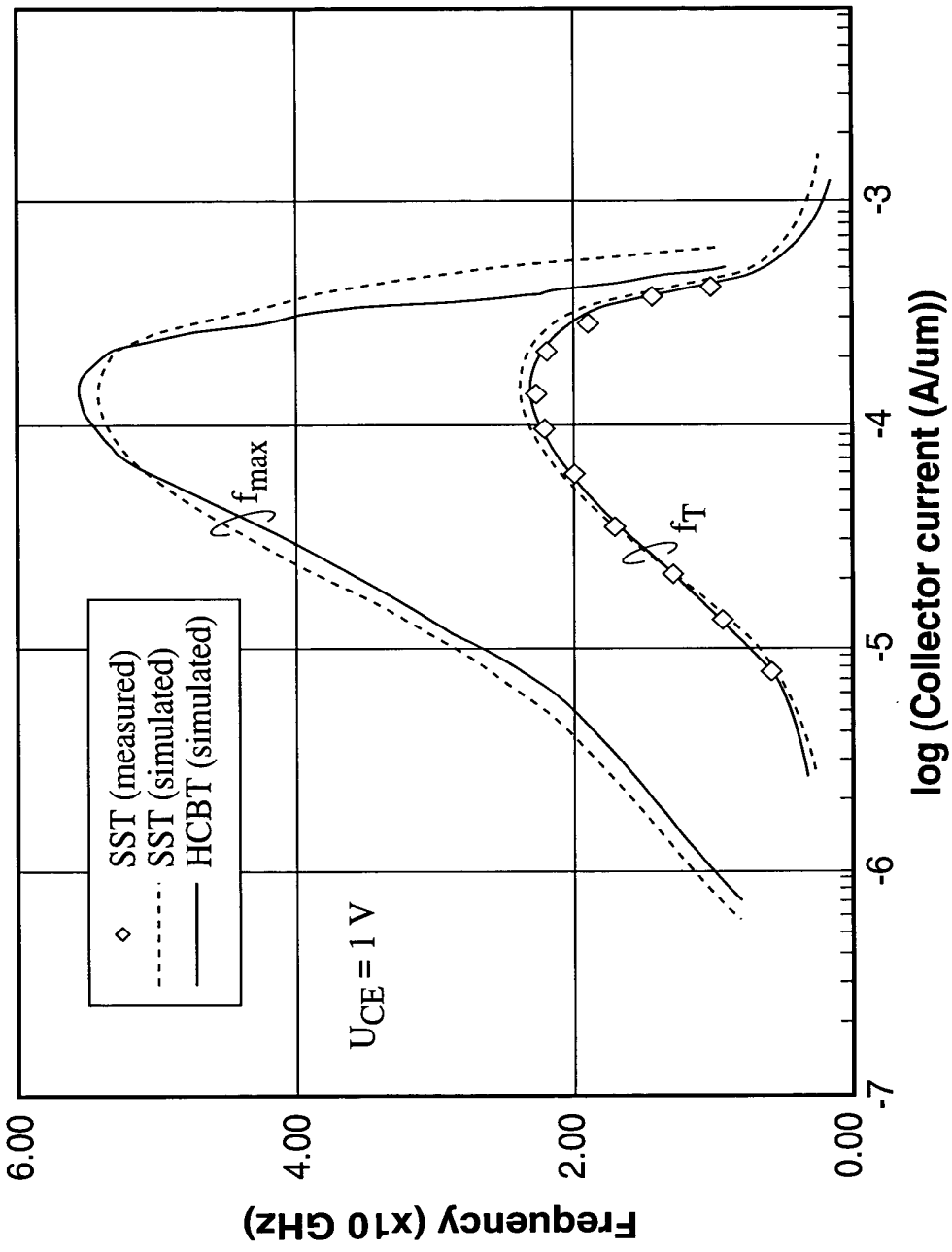
Frequency (x10 GHz)
6.00
4.00
2.00
0.00
log (Collector current (A/um))
-3
-4
-5
-6
-7
SST (measured)
SST (simulated)
HCBT (simulated)
f_{max}
f_T
U_{CE} = 1 V

FIG. 5

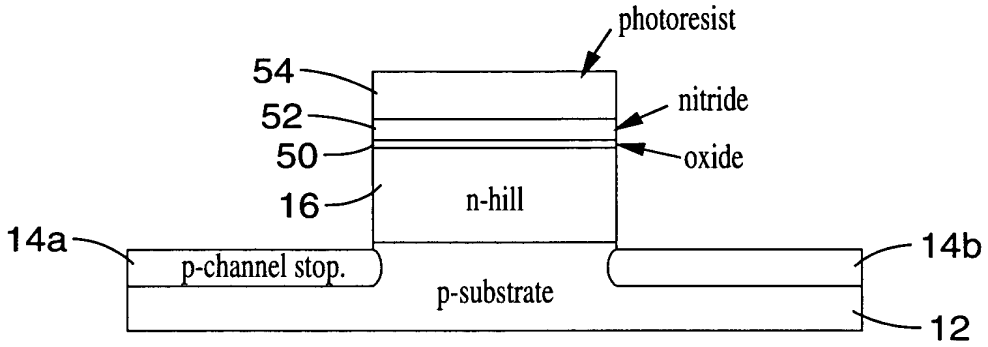
photoresist
54
52
50
16
nitride
oxide
n-hill
14a
p-channel stop.
14b
p-substrate
12

FIG. 6A

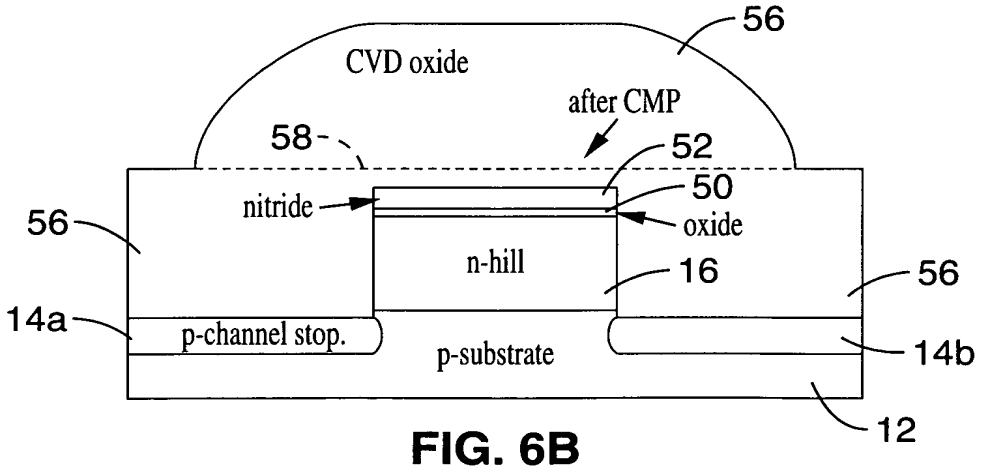
56
CVD oxide
after CMP
58
52
50
nitride
oxide
56
n-hill
16
56
14a
p-channel stop.
p-substrate
14b
12

FIG. 6B

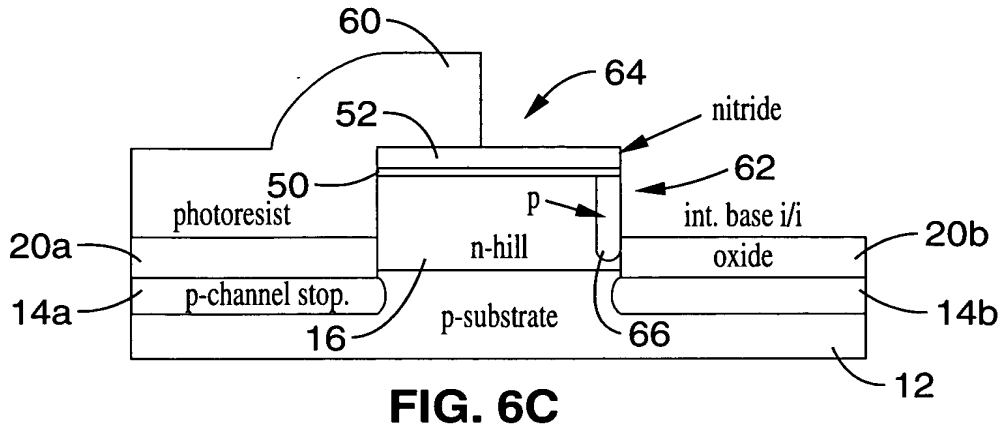

FIG. 6C

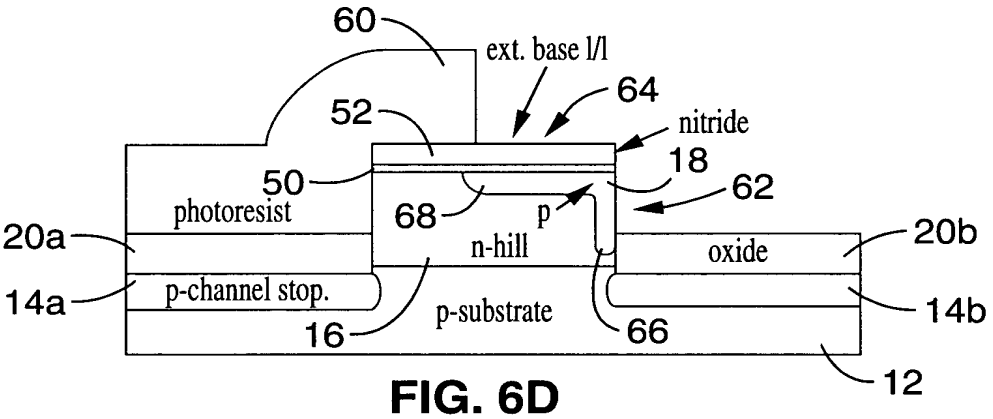

FIG. 6D

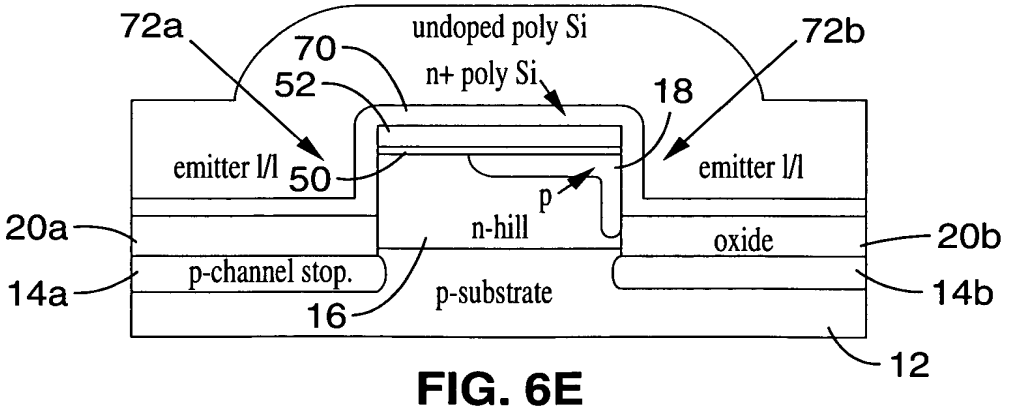

FIG. 6E

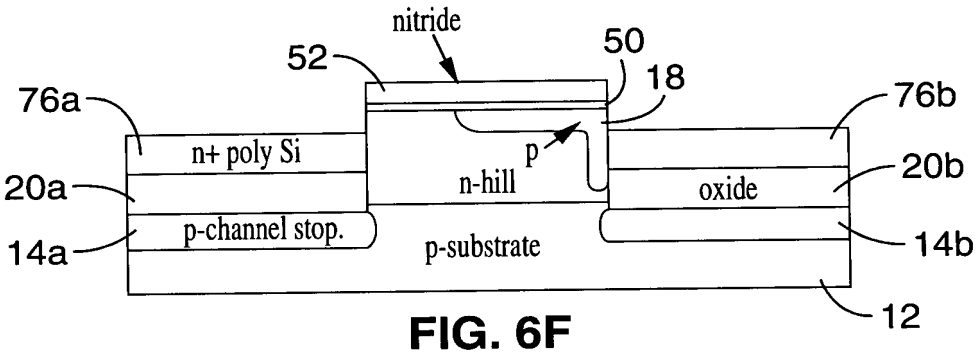
nitride
52
50
18
76a
76b
n+ poly Si
p
n-hill
oxide
20a
20b
p-channel stop.
p-substrate
14a
14b
12

FIG. 6F